William Smith Laboratories

Code of Practice

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Adapted for COVID-19

Keele UNIVERSITY

School *of* Geography, Geology *and* *the* Environment

Contents

Document Outline

The purpose of this document is to provide a resource which facilitates the safe and efficient use of the William Smith Laboratories, Keele University. For the purposes of this document, the William Smith Laboratories include WS 0.22 to 0.28, which are housed in the William Smith Building, and WSA 0.01 to 0.05, which are accessed externally in the Woodlands Laboratories.

This document comprises two primary components:

1. A user guide for the laboratories, with detailed descriptions of the available lab spaces, their uses, and the equipment housed within.

2. A clear system of health and safety guidelines which are designed to ensure the safety of laboratory users, and the smooth running of the labs

Any individual (staff and students) who intends to make uses of the William Smith Laboratories must carefully read through this document and familiarise themselves with the rules of the lab. Access to the laboratories will only be given after laboratory registration.

COVID-19 amendments

This Code of Practice has been amended to comply with the William Smith COVID Standard Operating Procedure (SOP). All amendments are highlighted in red. All laboratory users must comply with the departmental risk assessment and SOP whilst undertaking their work. All lab users are referred to the SOP in the first instance. Any concerns must be raised to the designated lead technical officer as soon as possible. If there are procedures outlined here that may inadvertently cause any issues for any staff with disabilities or protected characteristics, please raise this to the technical lead ASAP to allow us to adapt the guidelines and provide reasonable adjustments to the SOP.

The following additional rules are now applied when working in the William Smith and Woodlands Labs:

- Access to laboratory spaces will be provided on a pre-bookable basis only
- Handwash is provided at the main entrance to the labs and must be used prior to entry and upon departure
- Each lab now has designated maximum number of users, ranging from one to six. At no point may these numbers be exceeded
- Laboratory surfaces must be kept entirely clear when not in use to facilitate cleaning and reduce risk of contamination
- Computers that are not associated with equipment should not be used within the lab and used in office spaces to reduce potential contamination areas
- Social distancing of two metres is to be maintained at all times. Distance markings have been added to the lab floors to guide users. Face-to-face working is prohibited
- Windows should be opened where possible to maximise ventilation
- PPE is available for users as normal and must be used. A lab coat and appropriate gloves are required for all lab users. Glasses are available but must be cleaned by the user after use. Lab coats are to be assigned to an individual user and must not be removed from the lab. Storage will be provided.
- All PPE must be removed before leaving the laboratories.
- Users must clean thoroughly any surfaces that they have come into contact with when they have finished working. This includes lab worktops, fridges and freezers, light switches, door and window handles, and equipment. Cleaning products will be provided

Prior to, and immediately following usage, the laboratories will be inspected by a designated member of technical staff to ensure compliance with the SOP, including adequate provision of PPE and handwash, and the assessment of potential hazards, Users who are found to be failing to comply with the SOP, and are thus endangering their health, and the health of those around them, will be denied further permission to enter the laboratories.

Key Contacts

The overall management of the William Smith Laboratories is undertaken by the Laboratory Committee, which comprises the following individuals:

Dr Helen Glanville (co-chair)	h.c.glanville@keele.ac.uk
Dr Adam Jeffery (co-chair)	a.j.jeffery@keele.ac.uk
Prof. Chris Fogwill	c.j.fogwill@keele.ac.uk
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Mr Richard Burgess	r.burgess@keele.ac.uk
Mrs Gwyneth Jones	g.a.jones1@keele.ac.uk
Mr Luke Hobson	l.hobson@keele.ac.uk
Mr David Wilde	d.wilde@keele.ac.uk
Mr Matthew Harris	m.r.p.harris@keele.ac.uk

General enquiries relating to the lab should be sent to the laboratory e-mail account:

gge.labenquiries@keele.ac.uk

Lab users are encouraged to consult relevant staff members before beginning their work in the laboratories. If in doubt, always ask!

William Smith Laboratory Registration

New lab users

If you want to work in the laboratories without a staff member supervising you at all times, you will need to become a **Registered Lab User**. This will allow you to access the laboratories with your Keele card and book time with the various analytical instruments that are available for you to use.

To start, just complete the following steps:

1) Please download a copy of the Code of Practice here

2) Once you have read the Code of Practice and are familiar with the general layout and rules of the laboratories, please complete the registration form, which can be found here: http://bit.ly/GGERegister

3) Sign yourself up for a Lab Induction session using the online booking system (available here). An induction will take approximately 30 minutes and will give you the opportunity to discuss your project with the laboratory manager.

When you have completed the above steps, you are a **Registered Lab User**. You will now be able to access the laboratories using your Keele card. Most of the lab spaces are available for general use, but for many of the analytical instruments (e.g. SEM), you will need to attend an appropriate training session and then book instrument time first.

If you have any problems, please ask! You can contact the technical team by e-mailing: gge.labenquiries@keele.ac.uk

Existing lab users

If you are a registered lab user, then you are free to come in and undertake your work in any of the appropriate laboratories. It is your responsibility to ensure that you adhere to the laboratory health and safety policies given in the Code of Practice. Users found to be compromising their safety, or that of other lab users, will be reported to the laboratory committee and may have their laboratory access revoked. If you have any concerns regarding your work, please ask your supervisor or the technical team (gge.labenquiries@keele.ac.uk).

Lab inductions, training sessions, and instrument sessions can be booked using the online booking calendar (available here). Please ensure you have attended the relevant training session before booking an instrument session. All instruments can be booked in 2 hour slots.

If you require more time, please book multiple slots. We reserve the right to cancel multiple bookings to maximize equal access opportunities during busy times. In the event of a cancelled booking, you will be informed as soon as possible.

Please note that, due to COVID restrictions, we will temporarily be permitting access to laboratory spaces via the automated booking system, as we do currently for analytical instrumentation. If you require access to an instrument, please book a session with that instrument as normal. If you require access to a laboratory space for chemical or preparation work (e.g. sample preparation or analysis via pH probe), please use the Laboratory booking services given in the booking system. These will be labelled based on the room numbers (e.g. Geochemistry Laboratory [WS 0.27] session).

These measures are temporary and will be removed when the COVID SOP permits.

Laboratory Facilities

This section provides details of each of the individual laboratories and their respective purposes. The labs extend from WS 0.22 to 0.28 and WSA 0.01 to 0.05, and are split into 'Preparation Labs" and "Analytical Labs". Preparation Labs house facilities for sample preparation. Analytical labs house analytical instruments and **must never** be used for sample preparation.

Microscopy Lab (WS 0.22)

Purpose:

This lab space is an **Analytical Lab** and is available for the microscopic study of samples and for macro-photography of hand specimens. No more than two individuals are permitted in this lab, and access is permitted for pre-booked users only.

Equipment:

- Various petrological microscopes,
- Microscope (Olympus) suitable for diatom analysis
- Olympus low-powered stereo-zoom (40x) for micropalaeontological samples and hand specimens
- 2 Nikon photo-microscopes (with Nikon software capable of composite depth of field imaging)
    - 1 low-powered stereo-zoom (125x) - suitable for micropalaeontological residues (e.g. foraminifera) and other lithological samples, relatively coarse powders, small hand specimens and low-resolution thin-section images. Cross-polarised available on request.
    - 1 high power petrological microscope – suitable for most geological thin sections and achieves magnifications up to 500x. Can operate in plane- or cross-polarised light.
- Macrophotography station for high resolution photographs of hand specimens (~1-15 cm)

How to book equipment:

Use the online booking system (available here)

Preparation Lab (WS 0.24)

Purpose

The Preparation Lab is an intermediate **Preparation Lab**, which provides a workspace for those who are working with clean, hazard-free solutions and samples. Materials which represent a contamination risk (e.g. untreated soil samples) or which are subject to COSHH regulations should ideally not be used in this lab. Samples which are a contamination risk should be handled in the Sediments Lab (WSA 0.03), and hazardous samples should be handled in the Geochemistry Laboratory (WS 0.27).If in doubt, please consult a member of the Lab committee. No more than two individuals are permitted in this lab, and access is permitted for pre-booked users only.

Equipment:

- Assorted plastic ware - Although it can be removed and used elsewhere within the laboratories, it must be returned to the relevant storage cupboard in the Preparation Lab.
- Fridges/Freezers – Clean, non-hazardous sample storage only, Items need to be clearly labelled with name, sample name (ideally stating what the sample origin is) and date. Anything incorrectly labelled will be removed.
- 2 centrifuges – four to eight sample capacity, maximum sample diameter of 5 cm, maximum rpm of 16,000.
- Ultrapure water system (18.2 mΩ). Please note this should only be used when required. Do not waste it.
- Freeze-drying system
- Carbon coater for SEM sample preparation
- Please note that this lab contains the fire escape for rooms WS 0.22, 0.23, 0.24, 0.26, 0.27, and 0.28.

How to book equipment:

Use the online booking system (available here)

Dry Analytical Lab (WS 0.25)

Purpose:

The Geo-Analytical Lab is an **Analytical Lab**, which houses a number of instruments which can be used for the analysis of various solid materials. Access to this lab is not given with standard lab access. Those wishing to utilise this facility should contact a member of the lab committee. This lab is intended for sample analysis only. Any preparation of samples must be undertaken elsewhere. No more than six individuals are permitted in this lab, and access is permitted for pre-booked users only.

Equipment:

- A scanning electron microscope with an EDX system for chemical analysis is available for analysis of thin sections, sands, and powders.
- Hand-held X-ray fluorescence spectrometer for geochemical analysis of solid materials (please note to use this instrument, you must also be a registered radiation worker).
- A magnetic susceptibility system for the accurate measurement of magnetic susceptibility in solid samples.
- A heating/freezing stage microscope for the analysis of fluid inclusions within solid materials.
- An FTIR instrument for rapid identification of plastics.

How to book equipment:

Use the online booking system (available here)

Wet Analytical Lab (WS 0.26)

Purpose:

The Enviro-Analytical Lab is an **Analytical Lab** used for the analysis of soil extracts and water. This lab is intended for analysis only and any sample preparation should be undertaken elsewhere. No more than two individuals are permitted in this lab, and access is permitted for pre-booked users only.

Equipment:

- 1 fridge – for short term storage of clean samples prior to analysis only
- A TOC analyser for determination of total organic carbon in liquid samples.
- A DIONEX ion chromatography system is available for the analysis of anions in water samples.
- A particle size analyser is available for the accurate quantification of particle sizes in sediment samples, with a resolution of 0.04 to 2000 μm.
- A Horiba Aqualog spectrofluorimeter for the assessment of water quality.
- A Plate Reader for fluorescence and luminescence work.

How to book equipment:

Use the online booking system (available here)

Geochemistry Lab (WS 0.27)

Purpose:

This **Preparation Lab** provides a large space for clean geochemical research. Generally, all work involving hazardous chemicals should take place here. Any preparation or processing of samples which, due either to their nature or volume, can be considered to be dirty, should instead be handled in the Sediments Lab (WSA 0.03). No more than three individuals are permitted in this lab, and access is permitted for pre-booked users only.

Equipment:

- Assorted glassware. Although it can be removed and used elsewhere within the laboratories (excluding the Woodlands Laboratories), it must be returned to the relevant storage cupboard in the Geochemistry Lab.
- 2 fume cupboards for any work involving hazardous vapours and fumes. Both fume cupboards have a sink, water tap, and gas tap. Please note that the emergency gas shut-off valve can be activated with the large red button on the wall next to the main entrance of the room.
- Flammable and volatile storage in vented cupboards (underneath each fume cupboard). General use materials are found below the left fume cupboard. Materials which are for individual research use only (e.g. ultra-pure acids) are found below the right hand fume cupboard. Individual research materials are to be used exclusively by those to whom they belong.
- Distilled water system. To be used for rinsing your washing-up (see washing-up guide below).
- A drying oven is available for drying samples and glass/plasticware.
- Numerous fridges and freezers for sample storage. These should only be used for clean samples (i.e. prepared solutions, reagents etc), and not dirty soil or sediment samples. They should also not be used for long-term sample storage. Please label items with you name, what the sample is and the date, anything incorrectly labelled will be removed from the fridges and freezers.
- A smaller fridge is available for the storage of prepared standards only. Ensure standards are correctly labelled with name, contents and date.

How to book equipment:

Use the online booking system (available here)

Chemical Store (WS 0.28)

Purpose:

This room acts as a store for chemicals, as well an acid wash station and a recycling point. Any preparation or processing of samples which, due either to their nature or volume, can be considered to be dirty, should not be undertaken here. No more than one individual is permitted in this area.

Equipment:

- Acid washing station for labware. This may not be used without prior consultation with the technical team.
- A drying cabinet reserved for acid-washed materials.
- A range of chemical store cupboards, including: General chemicals, Oxidisers, Bases, and Poisons.
- A chemical waste cabinet for storage of materials which require planned disposal.
- A recycling point for re-usable bottles and associated labware. Users may help themselves to any containers stored here. Please ensure that containers have been thoroughly rinsed and de-labelled before depositing them here.

William Smith Central Corridor

The central corridor provides access to each of the specialist labs. Although specialist PPE is not required in this space, be aware that you should still be dressed appropriately for a laboratory (e.g. long trousers, fully-enclosed shoes, etc.). Lab users regularly move from one lab to another with samples that may be hazardous.

You should collect the required PPE from the central corridor before entering any of the laboratories. Protective glasses and gloves are found in wall-mounted dispensers, whilst lab coats are hanging up by the main entrance.

A series of coloured plastic trays are found in a rack at the end of the corridor. These are intended to provide storage for samples only. Trays should not be taken from the rack for any reason. If you require one or more of the trays to be allocated to you for sample storage, please speak to a member of the lab committee.

A series of blue trays is also present, which contain a variety of lab consumables and equipment for general use.

Distance markers are present on the floor of the central corridor, indicating a distance of two metres. All lab users must maintain social distancing at all times. There is not enough space for a one way system, so please give way to other lab users.

Ice Lab (WSA 0.01 & 0.02)

Purpose:

This **Analytical Lab** provides a space for isotopic analysis of water and ice, and includes a Cold Preparation Lab which operates at sub-zero conditions. Any preparation or processing of samples which, due either to their nature or volume, can be considered to be dirty, should not be undertaken here. No more than one individual is permitted in this area.

Equipment:

- A water triple isotope analyser for high precision isotopic analysis ($\delta^{2}H$, $\delta^{18}O$ and $\delta^{17}O$).
- A cold room for sub-zero work, including equipment for cutting and preparation of ice cores.
- A fridge-freezer for sample storage. This should only be used for clean samples associated with the Ice Lab (i.e. prepared solutions, reagents etc), and not dirty soil or sediment samples. They should also not be used for long-term sample storage. Please label items with you name, what the sample is and the date, anything incorrectly labelled will be removed from the fridges and freezers.

Sediments Lab (WSA 0.03)

Purpose:

This room acts as a **Preparation Lab** for samples including waters, soils, and sediments. This lab provides an ideal space to work with samples which, due to their volume or nature, may represent a contamination risk for clean geochemical work which would be taking place in the Geochemistry Lab (WS 0.27). No more than three individuals are permitted in this area.

Equipment:

- Assorted plastic ware - Although it can be removed and used elsewhere within the laboratories, it must be returned to the relevant storage cupboard after use.
- Assorted glassware and associated ceramics which must be returned to the relevant storage cupboard after use.
- Fridges/Freezers – Clean, non-hazardous sample storage only, Items need to be clearly labelled with name, sample name (ideally stating what the sample origin is) and date. Anything incorrectly labelled will be removed.
- A centrifuge – 6 or 12 sample capacity, maximum sample diameter of 3.2 cm, maximum rpm of 6000.
- A drying oven is available for drying samples.
- A growth cabinet to expose materials to controlled light, temperatures, and humidity.
- A high temperature muffle furnace is available for igniting solid samples, at temperatures up to 1,200 ˚C.
- A sieve shaker for wet or dry sieving of sediments.

Rock Crushing Lab (WSA 0.04)

Purpose:

This room acts as a **Preparation Lab** for samples which need to be crushed, ranging from soil to rock. This lab provides an ideal space to work with samples which, due to their volume or nature, may represent a contamination risk for clean geochemical work which would be taking place in the Geochemistry Lab (WS 0.27). Any crushing work which could lead to the production of dust, whether hand-crushed or machine-crushed, must be undertaken underneath the extractor hood. No more than one individual is permitted in this area.

Equipment:

- An extracted hood for working with materials which will give off dangerous dust.
- Assorted sieves for grain size analysis of soils and sediments.
- A pneumatic rock splitter to break large rock specimens down.
- A jaw crusher to reduce small sample fragments into gravels which are suitable for milling.
- An agate ring mill for grinding gravels into fine powders.
- A tungsten carbide ring mill for grinding gravels into fine powders. This mill is extremely heavy and should never be carried in its entirety.

How to book equipment:

- Use the online booking system (available here)

Health and Safety in the Lab

The Law

Under the Health and Safety at Work Act (1974), the employer, staff, students, and visitors each have certain responsibilities:

Our Responsibility:

The William Smith Laboratory Committee is responsible, as far as is reasonably practical:

- for ensuring the health, safety, and welfare at work of all its staff, students, and visitors.
- for establishing appropriate emergency procedures.
- for establishing mechanisms for consultation with all members of the School of Geography, Geology, and the Environment (hereafter referred to as GGE) in respect of health and safety.
- for devising safe working practices in its laboratories, lecture theatres, and offices.

Your Responsibility:

It is the responsibility of all staff, students, and visitors working in the building:

- to take reasonable care for the health and safety of themselves and of others who may be affected by their acts and omissions whilst in the workplace.
- to co-operate as necessary to enable any duty or requirement imposed upon GGE by, or under, any relevant statutory provisions to be carried out or complied with.
- to not interfere with, or misuse, anything provided by GGE or the University in the interests of health, safety, or welfare.

Health and Safety Philosophy

The purpose of our Health and Safety Policy is not to inhibit or 'baby-sit' lab users, but rather to ensure that the labs operate both safely and efficiently. The Lab Committee aims to provide facilities which are clean, friendly, and ready to use at all times. The regulations laid down in this document are derived both from our legal requirement to lab users, and from previous occurrences of poor lab practice or chemical misuse which had the potential to cause, or actually resulted in, harm to a lab user.

We therefore stress that this document should be considered carefully before any individual begins working in the laboratories. Poor lab practices have the potential not only to compromise your safety and that of fellow lab users, but also to waste time and resources, and to jeopardise data quality. Our labs are somewhat unique in the diversity of projects for which they are used; a lab user preparing inert water samples may find themselves working alongside someone using concentrated acids. A sample being prepared for microplastic

identification could be contaminated by a user to whom plastics represent no contaminative threat. Thoughtless or dangerous behaviour can lead to injury, severe financial costs, and compromised research projects, and will therefore not be tolerated. Any misuse of the labs should be reported to a staff member at the first opportunity. If you do not have time to do things correctly and safely, please do not enter the laboratory.

General Laboratory Rules

The following rules are applicable to the laboratory spaces in their entirety:

- Laboratory access is available only for Registered Lab Users. Non-registered users may only work in the labs if they are directly supervised at all times by a staff member.
- No food or drink **of any kind** is permitted in any of the lab spaces.
- You must not wear open-toed shoes, sandals, or shorts in any of the laboratories.
- Long hair must be under control and out of the way.
- You must wear personal protective equipment (PPE) in designated areas. Each lab has a sign on the door which indicates the level of PPE required before entering. Do not enter a lab without suitable PPE.
- All work benches are to be kept clean and clear when not in use. Samples should never be left out for extended periods without prior arrangement with a member of the lab committee. Sample storage is available on request.
- All samples must be fully labelled with your name, the material, the current date, and the date for disposal. For example, "Joe Bloggs, 5 % nitric acid and soil, 1/5/18, disposal 5/5/18". Any samples which are not labelled as above will be discarded. Labels may be added using permanent marker, and removed with methylated spirits. Do not attach stickers.
- All procedures are subject to COSHH regulations. Before conducting any work involving chemicals, you should complete a full COSHH assessment. A copy of the COSHH form should be left with your work at all times.
- Unauthorised personnel are not permitted in the labs unless directly supervised by a member of staff.
- Laboratory working hours are 09:00 to 16:45. Undergraduate students are not permitted in the labs outside of these times.
- No equipment should be used, or procedures carried out, without suitable training from a trained staff member.
- The use of headphones, earphones, or any other device which may impair your hearing is not permitted in WS 0.24, 0.26, 0.27, and 0.28.
- Wash bottles containing distilled water, deionised water, and methylated spirits (ethanol) are located in the majority of the labs. These must only be filled with the material shown on the label and must not be removed from their respective labs.
- Any labware (e.g. glass flasks, plastic beakers) that you have used must be thoroughly cleaned, according to the protocol for glassware, and returned to the relevant storage area as soon as it is no longer required.
- Fire escape routes must be kept clear at all times.
- Refrigerators and freezers are intended for short term sample storage only. All samples must be labelled and dated.

General safety information is given on the door of each lab. Do not enter a lab until you meet the required level of PPE.

Out-of-hours working

Undergraduate students are not permitted to work in the William Smith Laboratories outside of standard working hours (09:00 to 16:45). Postgraduate students may, under certain circumstances, be permitted to undertake certain activities throughout the labs, such as use of the microscopes, sieves, etc. However, access to analytical instruments such as the SEM or XRF, or to chemical facilities, is not permitted. Staff members may use facilities out of hours, but are encouraged to consult a member of the lab committee before beginning any work.

Housekeeping

It is important that any non-consumable labware (e.g. beakers, flasks, spatulas) which you use during your project are returned in the same condition in which they were provided. If you use labware during your project, it is your responsibility to clean it and return it promptly to the relevant storage area. This is particularly important for glassware, where chemical contamination may not be visible, but may still compromise the next user's project. Nobody is going to do this for you, and abandoning dirty labware for someone else to manage will not be tolerated.

The following steps must be taken as a minimum for all labware:

1. Remove any personal labels using methylated spirits and blue roll
2. Wash thoroughly using hot water and Lipsol detergent (available at all sinks). Wear the gloves provided during washing; Lipsol can mildly irritate skin.
3. Rinse ***three*** times using distilled water (**glass only**). Be sure to rinse each and every surface of the labware.
4. Clean glass and metal (e.g. glass beakers, stainless steel spatulas) can be dried in the drying cabinet in WS 0.28. Plastics should be dried on the drying racks in WS 0.24.
5. When dry, check the surfaces of the labware for any signs of contamination. If no marks or blemishes are visible, return to the relevant storage area.

Please do not abandon labware on the drying racks or in the drying cabinet. It is not likely to take any longer than 24 hours for your labware to dry, and blocking these facilities for other users may impact other lab user's schedules.

For more robust cleaning, which may be required for geochemical analyses, acid cleaning can be arranged. Please discuss with a member of the lab committee.

Emergency Procedures

All lab users must familiarise themselves with the locations of the following safety devices, which are summarised in Figures 1 and 2:

- Emergency shower and eye-wash station
- Fire extinguishers
- Fire alarm
- Spill clean-up materials

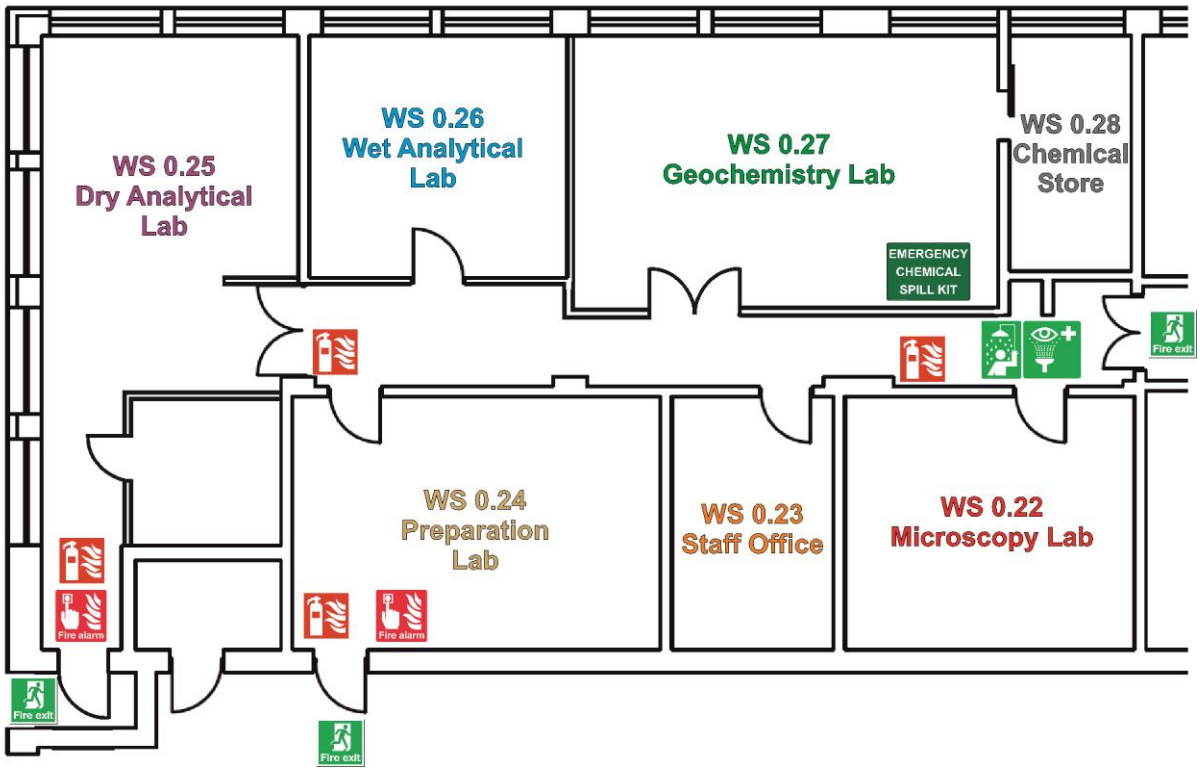

Figure 1: Summary map of the William Smith Labs showing locations of health and safety equipment

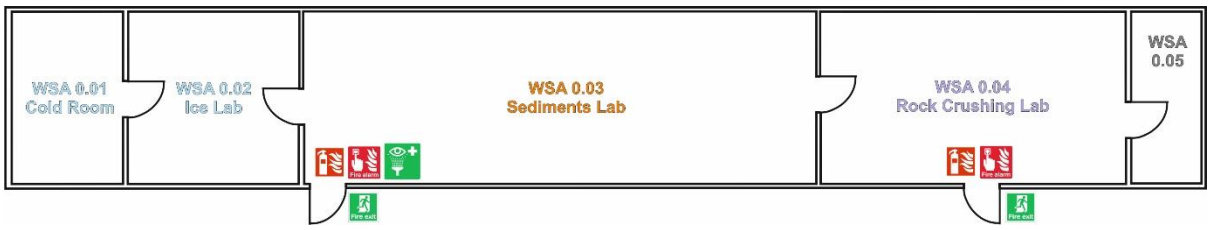

Figure 2: Summary map of the Woodlands Labs showing locations of health and safety equipment

Emergency shower and eye-wash

In the event of a chemical splash, do not panic. Proceed immediately to the emergency shower/eye wash station. Alert any other lab users to the situation if possible. Flush the affected area in the shower for ***at least 15 minutes***. If your clothing is contaminated, remove it whilst under the shower. For chemical splashes involving the eyes, hold both eyes open in the eye-wash to fully rinse the eyes. When the affected area(s) has been adequately decontaminated, seek immediate medical attention from a trained medical professional.

Fire

In the event of a fire, sound the alarm immediately via the fire alarm in WS 0.27. This alarm point will also shut off the gas supply to the fume cupboards. Attack the fire using the fire extinguishers located in the central corridor ***only if it is safe to do so***. Otherwise, report to assembly point on the Front Car Park and do not re-enter the building until authorised to do so.

Chemical spills

In the event of a chemical spill, alert others, move yourself and others to a safe distance, and determine the appropriate course of action based on your COSHH assessment. Ensure you are wearing appropriate PPE before tackling a spill. Prevent the build-up of hazardous vapours, dusts, or fumes by increasing ventilation.

Small chemical spills are defined here as those which do not pose an immediate threat except via direct contact, do not have any risk of spreading rapidly, and do not pose a risk to the environment. These minor spills should be cleaned up immediately, following any relevant COSHH requirements. Acids or bases should be neutralised using sodium bicarbonate and ammonium chloride, respectively. Unless otherwise stated in the COSHH assessment, the waste spill can now be dried using sand/vermiculite/cat litter, swept up, and disposed of in the general waste.

Large spills should be brought to the immediate attention of all other lab users and a suitable member of staff. Do not attempt to tackle these alone; evacuate the area and seek help from a trained staff member.

Personal Protective Equipment (PPE)

The protection of the health and safety of workers in the workplace is a legal requirement. As such, the following articles of PPE are made readily available for all lab users, and should be used wherever required. Additional PPE such as face masks and shields should be used where suitable.

Laboratory Coats

When working in the labs, lab coats are mandatory, as stated in the William Smith COVID SOP. Lab coats must be designated **for a single user only** and kept within the lab. Individual storage will be provided for lab coats. Lab coats may be found hanging up on the wall at the main entrance to the William Smiths Labs.

Eye Protection

Splashing chemicals represent a serious threat to the eyes, which are particularly vulnerable to chemical damage. Eye protection is available in the central corridor and is mandatory in areas where you may reasonably be expected to come into contact with potentially harmful materials; you only get one pair of eyes! You should select the form of eye protection that is most suitable for your work, but be aware of what other lab users are doing around you. As stated in the William Smith COVID SOP, all safety glasses must be washed by the user when finished; isopropyl alcohol-based cleaner will be provided for this purpose.

Hand Protection

Gloves must be worn when working in the laboratories, as stated in the William Smith COVID SOP. General purpose, disposable gloves are available in the central corridor, and should be worn whenever necessary. Be sure to select the appropriate gloves for your purposes. Before using gloves, ensure that they are in good condition, with no tears or punctures. When removing gloves, peel the glove off the hand starting at the wrist and moving towards the fingers, turning the glove inside-out, and ensuring no contact between your bare-skin and the working surface area of the glove. As soon as you have removed the gloves, wash your hands thoroughly. Gloves must be removed before leaving the laboratories.